

REMARKS

The Examiner's communication dated August 24, 2007 has been received and carefully considered. In conformance with the applicable statutory requirements, this paper constitutes a complete reply and/or a bona fide attempt to advance the application to allowance. Specifically, claims 33, 43, 46, 49, 57 and 58 have been amended; claim 75 has been cancelled; and claims 79-81 have been added. In addition, detailed arguments in support of patentability are presented. Reexamination and/or reconsideration of the application as amended are respectfully requested.

Summary of the Office Action

Claims 33, 43, 46, 49, 53-55, 57-58, 67-68, 70, 71, 73-76 and 78 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement (i.e., alleged new matter).

The drawings are objected to under 37 CFR 1.83(a) for failing to show every feature of the invention specified in the claims, particularly claim 75 is objected to for calling for resin.

Claims 33, 43, 46, 49, 53, 67, 68, 71, 73, 74, 75 and 76 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ernst et al. (U.S. Patent No. 5,816,759).

Claims 50 and 70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ernst et al.

Claims 54 and 55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ernst et al.

Claim 78 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ernst et al.

Dependent Claim 70 Should be Rejoined with the Pending Claims

On February 9, 2007, the Examiner mailed a restriction requirement which required an election of a single disclosed species for prosecution on the merits. In a response submitted on April 5, 2007, Applicant elected the shell shown in FIGURE 4a (the slit-type shell) and the support member shown in FIGURE 1a. In that response,

Applicant submitted that several claims were readable on the elected species, but did not specify that claim 70 was to be included. In the Office Action to which this paper is responsive, the Examiner examined and commented on all the claims Applicant indicated as being readable on the elected species, as well as claim 70.

Withdrawn claim 70 calls for the shell support to be threadedly engaged to the bolt. This is clearly shown in both of FIGURES 4a and 1a, both of which are part of the elected species. Accordingly, Applicant respectfully submits that claim 70 should be rejoined to the pending claims currently being examined.

New Claims Are Directed to Elected Species

New claims 79-81 are directed to the elected invention as required. That is, claims 79-81 are readable on the elected species, i.e., FIGURES 4a and 1a.

35 U.S.C. § 112, First Paragraph Rejections

While not acquiescing to the rejections under 35 U.S.C. § 112, first paragraph, Applicant has amended claims 33, 43, 46 and 49 for purposes of expediting prosecution in the hope of leading to an early indication of allowance. In particular, the objectionable text from each of claims 33, 43, 46 and 49 has been deleted. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. § 112, first paragraph, be withdrawn against at least these claims.

The Examiner indicates that claim 54 calls for "only a split," but asserts that the originally filed disclosure never stated that the base ring had only a single split. Thus, according to the Examiner, such language is considered new matter. Applicant respectfully disagrees. Beginning at paragraph 53 on page 17 of the originally filed disclosure, the subject application indicates that expansion shell 102 has a circular base portion 104 that is a non-continuous circular structure. The base portion 104 is said to define **a slot or split 106** and does not form a closed annular ring. This is in accordance with FIGURE 4a of the subject application which illustrates only a single split 106. For at least these reasons, Applicant respectfully submits that claim 54 calling for only a single split is not new matter and respectfully requests that the rejection against claim 54 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Claim 55 calls for the shell of claim 33 to include a radially thickened base ring at a first end having a weakened area that splits an otherwise circumferentially continuous structure. The Examiner indicates that this language was never stated in the originally filed disclosure and therefore he considers such language new matter. The Applicant respectfully disagrees. Upon close inspection of FIGURES 4a and 4b of the subject application, Applicant respectfully submits that a radially thickened base ring is illustrated. Particularly, the base ring identified by reference numeral 104 in FIGURES 4a and 4b is shown being radially thickened relative to an adjacent portion (i.e., the portion to which the lead line for reference number 102 specifically points).

To the extent that the Examiner takes issue with the recitation of a weakened area splitting an otherwise circumferentially continuous structure, the Applicant again points the Examiner to paragraph 53 of the originally filed disclosure which specifies that circular base portion 104 is a non-continuous circular structure that defines a slot or split 106 and does not form a closed annular ring. Applicant further directs the Examiner's attention to the end of paragraph 55, which indicates that diametrical expansion of the circular base portion 104 is facilitated by the gap or slot 106 in the expansion shell 102.

Should the Examiner take issue with the indication that the base ring is recited as having a weakened area that splits an otherwise circumferentially continuous structure, Applicant respectfully directs the Examiner's attention to paragraph 49 of the originally filed disclosure. More particularly, paragraph 49 specifies that the embodiment of FIGURE 3 (now FIGURES 3a and 3b) employs an expansion shell 82 having a circular base portion 84 that is modified to reduce the strength of the base portion 84 (i.e., reduced strength is a weakened area). In this same paragraph, it is indicated that a variety of configuration changes could be made in order to achieve the desired result of **weakening** the base portion 84 and several examples are provided, including the employment of one or more slits that may or may not extend completely through the circular base portion 84.

The Examiner noted that claim 78 calls for a base ring having a larger diameter than an adjacent portion of the shell. The Examiner alleges that the originally filed disclosure fails to provide "such basis" and thus such language constitutes new matter.

Again, the Applicant requests the Examiner closely inspect FIGURES 4a and 4b and argues that, upon such close inspection, the Examiner will find that a base ring having an outside diameter larger than an adjacent portion of a shell is in fact illustrated.

Drawing Objection

Claim 75 has been cancelled and therefore the drawing objection should be withdrawn.

The Claims Distinguish Patentably Over the Reference(s) of Record

Amended independent claim 33 calls for a base ring at a first end of a shell to include at least one split that extends to a recess defined between adjacent fingers of the shell and thereby facilitates axial movement of the support device in the direction toward and relative to the expansion shell to allow the support device to move through the base ring. This limitation was previously provided in dependent claim 57, which was indicated as containing allowable subject matter. For at least this reason, Applicant respectfully submits that claim 33 and claims 53-55, 58, and 73-74 are in condition for allowance. Applicant further asserts that withdrawn claims 59-64 and 72 should be allowed upon the allowance of claim 33 due to their dependency from a generic base claim.

Dependent claim 54 calls for the shell of claim 33 to include a base ring at a first end thereof that is nearly circumferentially continuous and has only a single split. In rejecting claim 54 as being obvious over Ernst et al., the Examiner concedes that Ernst is silent about having only a single split on the base ring. According to the Examiner, the alleged suggestion in Ernst et al. of a base ring having various numbers of splits supports the Examiner's contention that it would have been considered obvious to one of ordinary skill in the art to modify Ernst et al. to have only a single split on the base ring since it is allegedly obvious to try varying a result effective variable. According to the Examiner, such a modification controls the sequential finger expansion.

The Examiner appears to be mischaracterizing the specific teachings of Ernst. The Examiner cites column 4, lines 15+, (of Ernst et al. as allegedly supporting the

Examiner's position that Ernst et al. suggests a base ring can have various numbers of split(s)). The specific language of Ernst indicates that Figure 2 shows an expandable upper sleeve portion 32 including a plurality of at least two expandable upper fingers 33 and an expandable lower sleeve portion 34 includes a plurality of at least two expandable lower fingers 35, wherein the fingers are defined by longitudinal slots 36 formed in the expandable sleeve 30. In other words, Ernst et al. specifically teaches that his expandable sleeve has at least two upper and lower fingers defined by longitudinal slots. Having two fingers at each end necessarily requires at least two slots separating such fingers. Accordingly, it is pure conjecture by the Examiner that Ernst et al. suggests a base ring having various numbers of splits, including a single split. Rather, at best, Ernst et al. suggests a base ring having various numbers of splits amounting to two or more splits. Ernst et al. specifically excludes any suggestion of a base ring having only a single slit.

Moreover, the Examiner's statement that it would have been considered obvious to one of ordinary skill to modify Ernst to have only a single split appears to be entirely based on hindsight for the purpose of rejecting Applicant's claim. The Examiner is reminded that the recent KSR decision reaffirmed the principle first exposed in *In re Kahn*: "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

For at least the forgoing reasoning, Applicant respectfully submits that dependent claim 54 is further patentable for this further patentably distinguishing feature.

Dependent claim 55 calls for a shell including a radially thickened base ring at a first end having a weakened area that splits an otherwise circumferentially continuous structure and thereby facilitates axial movement of the support device in the direction toward and relative to the shell to allow the support device to move through the base ring. While the Examiner did specifically address claim 55 in his new matter rejection under 35 U.S.C. § 112, first paragraph, the Examiner wholly failed to address the limitations of dependent claim 55 in his obviousness rejections in numbered paragraph 8 of page 6 of the most recent Office Action. The Examiner has failed to even allege the obviousness of the recitations of claim 55 based on Ernst et al. Specifically, the

Examiner has not specified that it is his opinion that the limitation requiring a radially thickened base is somehow obvious in view of Ernst et al., nor that Ernst et al. somehow renders obvious a base ring having a weakened area that splits an otherwise circumferentially continuous structure. Accordingly, Applicant respectfully submits that claim 55 is further patentably distinguishable over Ernst et al. and requests the Examiner withdraw his rejection against at least this claim.

Independent claim 43 calls for an expansion shell having fingers only at one end for engaging a rock formation in an aperture for receiving an elongated bolt. In the section "Response to Arguments" in the most recent Office Action, regarding claim 43, the Examiner attempts to address the argument that the shell of claim 43 is required to have fingers only at one end while Ernst et al. has fingers at both ends. Specifically, the Examiner indicates his disagreement with Applicant's position and states that he has construed member 32 of Ernst et al. as a base member and not fingers. Applicant respectfully submits that it is irrelevant how the Examiner desires to construe members 32 of Ernst. Claim 43 calls for fingers only at one end. Irrespective of how the Examiner desires to construe Ernst, it undoubtedly discloses a sleeve 30 having fingers at two ends, not only at one end. Applicant respectfully directs the Examiner's attention to line 21 of column 4 in Ernst et al., which states that Figure 2 shows an expandable upper sleeve portion 32 including a plurality of at least two expandable upper **fingers** 33 and the expandable lower sleeve portion 34 including a plurality of at least two expandable lower **fingers** 35. Accordingly, Applicant challenges the Examiner's extremely tenuous interpretation of the expandable sleeve 30 in Ernst et al. as somehow disclosing fingers only at one end. For at least this reason, Applicant respectfully submits that claim 43 and dependent claims 57 and 70 are in condition for allowance.

Dependent claim 57 previously depended from independent claim 33. In its previous dependency, dependent claim 57 was indicated as containing allowable subject matter. For the same reasons, it is respectfully submitted that claim 57 is still additionally patentably distinguishable over the art of record.

Dependent claim 70, which is requested to be required with the pending claims, calls for the shell support of claim 43 to be threadedly engaged with the elongated bolt.

In an attempt to deal with this limitation, which the Examiner concedes is missing from Ernst et al., the Examiner takes Official Notice that the support device being threadedly received on a bolt is old and well known. Further, the Examiner indicates that it would have been considered obvious to one ordinary skill to modify Ernst et al. by making the support device threadedly received on the bolt since (allegedly) such modification is well known and old and since this facilitates the installment of the support device. Per the Examiner, because Ernst et al. discloses or suggests support 29 possibly being integral with the bolt and/or separate in column 3, it is somehow considered obvious to modify Ernst et al. to have a threaded support since it is obvious to choose from a finite number of identified, predicable solutions, with a reasonable expectation of success. In an apparent attempt to supply some reasoning for this modification, the Examiner indicates that such modification facilitates installation.

First, the Official Notice being taken by the Examiner is hereby traversed and/or challenged in accordance with MPEP §2144.03. While Applicant concedes that threads and threaded connections are generally known, the Examiner impermissibly concludes without any legitimate support on the record that their use as claimed is somehow well known. Applicant disagrees and respectfully requests that, in accordance with the obligations imposed under MPEP §2144.03, the Examiner provide a reference or other suitable evidence showing a threaded connection [living hinge being used] in the manner claimed.

Second, Applicant challenges the Examiner's assertion that it is somehow obvious to modify Ernst such that sleeve 30 would be threaded to the bolt. In particular, this would appear to provide no advantage to the arrangement disclosed in Ernst except to increase manufacturing costs, decrease manufacturing efficiencies, and further complicate the bolt assembly of Ernst et al.

Independent claim 46, as amended, calls for inserting and advancing a mine roof bolt with an expansion shell assembly carried thereon upwardly into a drilled hole in a rock formation. In addition to the arguments already on the record, Applicant respectfully submits that Ernst et al. relates to an expansion anchor that is directed downwardly into a predrilled hole, such as in a concrete substructure. In contrast, and as required by the limitations contained in claim 46, the method called for in claim 46

requires the inserting and advancing of a mine roof bolt with an expansion shell assembly carried thereon upwardly into a drilled hole of a rock formation. Because this limitation is entirely missing from Ernst et al., Applicant respectfully submits that claim 46 and claims 67, 68, 76 and 79 are in condition for allowance. Moreover, with the allowance of claim 46, it is respectfully submitted that dependent claims 62 and 77, previously withdrawn, should be rejoined with the other claims and allowed upon allowance of claim 46 from which these claims depend.

New dependent claim 79, which is asserted as being readable on the elected species, calls for providing an expansion shell having a base portion including a slit extending from a first axial end of the base portion to a second axial end of the base portion, wherein the expansion shell further has spaced apart fingers extending from the base portion, and wherein the slit and a recess defined between adjacent fingers together extend an entire longitudinal extent of the expansion shell. This limitation is entirely missing from Ernst and accordingly it is respectfully submitted that dependent claim 79 is additionally patentable on this basis.

New dependent claim 80, which is asserted as being readable on the elected species, calls for the support device of claim 46 to be threaded onto the mine roof bolt to a position slightly above and spaced apart from an unthreaded portion of the mine roof bolt. Even should the Examiner continue to allege that the requirement of threads is somehow obvious, Applicant respectfully submits that there is no disclosure or fair suggestion of threading a support device onto a mine roof bolt to a position slightly above and spaced apart from an unthreaded portion of a mine roof bolt. Moreover, there would be no reason for one skilled in the art to do so with the Ernst et al. expansion assembly.

Dependent claim 81, which is asserted as being readable on the elected species, calls for said initial rotation of the mine roof bolt to cause the support device to threadedly move downwardly along the mine roof bolt until reaching the unthreaded portion of the mine roof bolt. Again, to the extent that the Examiner maintains his position that it is somehow obvious to thread the support device onto the mine roof bolt, Applicant respectfully submits that the step of initially rotating the mine roof bolt to cause the support device to threadedly move downwardly along the mine roof bolt until

reaching an unthreaded portion thereof is not disclosed or fairly suggested from Ernst et al.

Independent claim 49, as amended, calls for a base ring at a first end of the expansion shell to include at least one split that extends to a recess defined between adjacent fingers of the shell. This limitation parallels one previously contained in dependent claim 57, which was indicated as containing allowable subject matter. Accordingly, it is respectfully submitted that claim 49 and claims 71 and 78 dependent therefrom are in condition for allowance.

Independent claim 50 calls for a support device to be threadedly received on an associated bolt adjacent a first end of a shell. Claim 50 was rejected by the Examiner along with claim 70, which was discussed above. In particular, the Examiner took Official Notice that a support device being threadedly received on a bolt is old and well known. As with respect to claim 70, Applicant respectfully traverses the Official Notice being taken by the Examiner against claim 50 and requests the Examiner provide a reference or other suitable evidence showing a threaded connection between a support device and a mine roof bolt in the manner claimed. Also, Applicant challenges the Examiner's assertion that is somehow obvious to modify Ernst such that sleeve 30 would be threaded to the bolt on which sleeve 30 is received. As indicated in reference to claim 70, Applicant asserts that this would provide no advantage to the arrangement disclosed in Ernst except to increase manufacturing costs, decreasing manufacturing efficiencies, and further complicate the bold assembly of Ernst et al. In other words, one skilled in the art would be driven away from adding such a threaded connection to the Ernst et al. expansion assembly. For at least these reasons, it is respectfully submitted that claim 50 is condition for allowance.

CONCLUSION


All formal and informal matters having been addressed, it is respectfully submitted that this application is in condition for allowance. It is believed that the claim changes and/or arguments supporting patentability clearly place the application in condition for allowance, defining over any fair teaching attributable to the references of record. Alternatively, if the Examiner is of the view that the application is not in clear condition for allowance, it is requested that the Examiner telephone the undersigned for purposes of conducting a telephone interview to resolve any outstanding differences. Accordingly, an early notice of allowance is earnestly solicited.

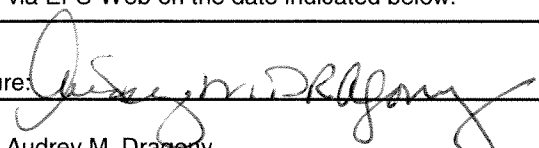
Respectfully submitted,

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